THE UNIVERSITY OF TEXAS BULLETIN

No. 3734: September 8, 1937



# (1) Notes on Some Skeletal Remains of Texas

By

GEORGE WOODBURY

# (2) An Interesting Vegetal Artifact from the Pecos Region of Texas

By

MELVIN R. GILMORE

# (3) Supplementary Notes on the Corner-Tang Artifact

By

J. T. PATTERSON

Bureau of Research in the Social Sciences
Study No. 25

Anthropological Papers, Vol. I, No. 5


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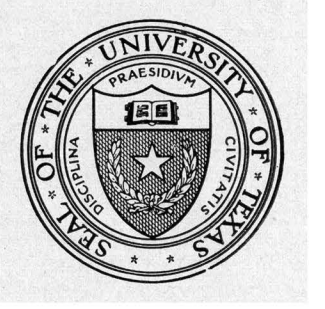


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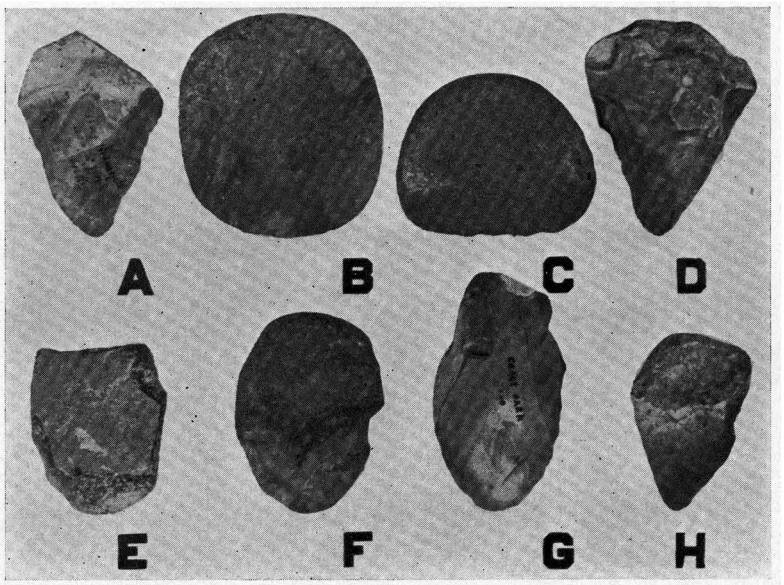
## TEXAS FIST AXES




A, D, G, and H are typical bladed forms.
E and F more axe-like.
B and C are edged manos (saws rather than axes, but sometimes axes).

N.B.: The editor of this series of papers is desirous of getting information about American "fist axes," *i.e.*, axes with a sharpened edge or blade at one end of an otherwise un-worked nodule of flint intended for use in the hand without hafting or handle. He is planning to write a bulletin on this implement, common in Central and Southwest Texas.

Donations of specimens to The University of Texas Museum will be highly appreciated. In lieu of donations, good pictures will be very acceptable. Especially important is an account, with each specimen, of its origin (place found) and of archaeological materials found with it. The type should be indicated by reference to accompanying cut.

Address, J. E. Pearce, The University of Texas.

**The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government.**

**Sam Houston**

**Cultivated mind is the guardian genius of Democracy, and while guided and controlled by virtue, the noblest attribute of man. It is the only dictator that freemen acknowledge and the only security which freemen desire.**

**Mirabeau B. Lamar**

Anthropological Papers of The University of Texas
Vol. I. No. 5
J. E. PEARCE, Editor

Homo sum: humani nihil a me alienum puto

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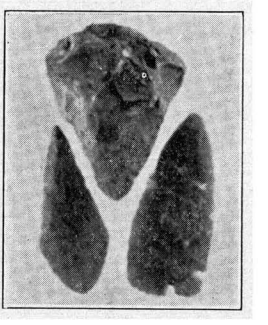

Bureau of Research in the Social Sciences
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# NOTES ON

# SOME SKELETAL REMAINS OF TEXAS

By

GEORGE WOODBURY

Peabody Museum

Cambridge, Mass.

## EDITOR'S NOTE

The editor had hoped that Dr. Woodbury would be able to get larger and more representative results from his studies of the skeletal materials in The University of Texas anthropology laboratory, but feels that important conclusions may be drawn from even these rather meager returns.

The old long headed race represented by Dr. Ray's extremely dolichocephalous specimens, from near Abilene, must have occupied all South Texas at one time, in fact at a very early time. This type of man has been found by The University of Texas field parties in archaeology along the Rio Grande, the Devils, the Neuces, and the Guadalupe rivers from southern West Texas to the Gulf and on the Gulf were undoubtedly represented in the tall long headed historical Karankawa. These long heads seem to have been, for the most part, the earliest inhabitants of the State and were generally associated with middens furnishing evidence only of a low hunter culture. Because of the great number of snail shells of a Bulimus genus found in these middens we call them at The University of Texas the "snail shell middens." Some are found on the Oso some two or three miles up that estuary from the site mentioned by Dr. Woodbury and in South and Central Texas they are sometimes found at the bottom of the large "burnt rock middens."

The round heads seem to have come in later from the northeast and to have driven the long heads out or to the coast where they survived to the coming of the white man in the Karankawa tribes. These were to the last a people of low culture.

We hope to see this study extended and enlarged to include all the skeletal material we have at The University of Texas. This material is accumulating at this particular time from our work in the beds of the new lakes being formed by dams across the Colorado River above Austin.

The editor wishes to make one slight correction in Dr. Woodbury's statement concerning the work that has been done at the Oso site. The first work done there was by John B. Dunn and Alexander Cox of Corpus Christi, who uncovered about a dozen skeletons. Later George C. Martin and Wendell H. Potter, then of Rockport, took

out twenty-one skeletons; E. B. Sayles, now with the Gila Pueblo, Globe, Arizona, removed sixteen skeletons; lastly, The University of Texas worked there, with a considerable crew, nearly all of one summer and recovered ninety-three skeletons.

J. E. PEARCE.

August 9, 1937.

# NOTES ON SOME SKELETAL REMAINS OF TEXAS

These notes on some skeletal remains of Texas cover a pathetically small portion of this largest of the United States. The scope of this study, limited by the condition, number and provenience of the specimens available, is restricted to three of the now extinct tribes of the coastal and Big Bend regions. Two series Oso and Caplen Mound, are from coastal sites; one is from the Big Bend of the Rio Grande in western Texas. The purpose is a study of the genetic or blood relationships of these three populations to one another. By way of preface it is advisable to outline what is known about each of the sites respectively.

*Oso.* The aboriginal cemetery at Callo del Oso, Corpus Christi Bay, Nueces County, Texas, was first excavated by a party from Gila Pueblo, Globe, Arizona, and subsequently by an expedition from the Department of Anthropology of The University of Texas. All of the bones were so badly crushed by the weight of sand over them that only a few crania were usable even after extensive reconstruction and repair. This series is too small (less than ten individuals) for statistical reliability but as there are no more in existence nothing can be done about it. Few artifacts accompanied the Oso burials and while there are no evidences of European contact there is no reason for assuming an extreme antiquity for the site. In historic times this part of Texas was inhabited by Karankawa Indians and it seems probable that Oso was a Karankawan site.

*Caplen Mound.* The specimens which form this series were excavated from a site on Bolivar Peninsula, near the city of Galveston, Texas. Although vandals had disturbed the burials to a considerable extent a group of students from the Department of Anthropology of The University of Texas succeeded in collecting a sufficient number of crania to form a fair sized series. The abundant cultural material accompanying these burials differed radically from the artifacts found at Oso. There were also definite indications of contact with Europeans which dated the site as within the historic period. In historic times Bolivar peninsula was inhabited by the semi-agricultural Attacapa, and occasionally by fishing parties of

the Bidai, a Caddoan tribe from the interior. There are indications that Caplen Mound is an Attacapan site and the linguistic maps show them as the eastern neighbors of the Karankawa.

*Big Bend.* The caves and rock shelters of the arid Big Bend region of western Texas, notably Brewster and Val Verde counties show evidences of a people similar in culture to the Basket Makers of the San Juan drainage of the Southwest. The skeletons from these sites have been studied by Dr. T. D. Stewart and his data, together with additional specimens from The University of Texas, form the Big Bend series used in this report. There is no certain indication of the age of these sites beyond the fact that they are definitely pre-Columbian; but there is no evidence, on the other hand, that they are much older than the opening of the Historical period.

## Analysis

There are two major phases in every analytical problem, first the discovery of what is, and second, what it means. The initial step of fact-finding is purely objective and mechanical. In the present instance it consists of taking certain measurements and computing statistics from them. The three series used in this report have been compared statistically with one another and the physical similarities or differences noted.

The metrical characteristics of the male series are used in these comparisons since these data alone are suitable for statistical treatment. The comparisons have been effected by using the "alpha" expression ("A"), the integral part of Pearson's "coefficient of racial likeness." This expresses the probability with which the numerical difference between means may be considered as significant or real (*i.e.*, not due to random sampling). The series are compared measurement for measurement and only when the value of "A" equals or exceeds 5 is the difference considered actual and real. This formula has been adopted on account of the small size of the series and because it expresses the results in terms of the highest probability as far as the given data allow us to judge.

The second step in the analysis, the interpretation, is essentially subjective and a process in which the personal equation of the observer plays a vital part. In order to clarify this part of the

process it is advisable to digress to the biological theories on which it depends. The appearance (physique) of any living organism, whether Man or Amoeba, is conditioned by two principal factors, heredity and environment. One is the transmission of the basic physical equipment from the parents and the other is the modeling and modifying effect exerted by the external world. Both of these factors operate together to form the phaenotype, or fully developed creature, which we study. It is illogical and contrary to evidence to assume either factor operates to the exclusion of the other.

## Conclusions

*Oso—Caplen Mound.* The data available show (Table 1) that there is a definite physical difference between the populations of Oso and the Caplen Mound. From the twenty-two measurements compared and the indices dependent on them it is clear that the Oso crania are probably longer and narrower than the Caplen Mound skulls. At the same time the Oso mandibles are shorter, shallower and have a lower mandibular angle. One can conclude from this that these series are really different and not just samples selected at random from one and the same population. It seems probable from what we know of these sites that in reality we are comparing Karankawa with Attacapa Indians and that this may explain their physical dissimilarity. Although they lived near one another and under similar environmental conditions we have evidence that the Oso site is older than the Caplen Mound. It can be argued that they were in all probability remotely related and that a difference in time is the reason why they are physically unlike. Whether this relationship was collateral or lineal, as the different ages of the sites makes possible, we are not in a position to judge.

*Oso—Big Bend.* The seven measurements and related indices by which these two series were compared show nothing but physical similarities. Such minor differences as were found (Table 2) are of the magnitude one would expect to find between random samples from the same population. This fact is difficult to understand since they lived several hundred miles apart and under wholly different environmental conditions. They would have every excuse for looking unlike. Two alternative explanations of this may be brought forward. One is that these two groups were so intimately related that different environmental conditions had not had time to change

their respective physiques, such as might be the case were they only a few generations removed from one another. According to this, the most plausible explanation, the Big Bend population may have immigrated from the neighborhood of Oso or thereabouts, moved up the Rio Grande valley, and finally settled in the Big Bend region. With such a radical change in environment the simple culture of the coastal people elaborated and changed to meet new surroundings. The Big Bend culture is the more complex of the two, indicating a northward movement from the coast rather than in the reverse direction since cultures seem generally to progress from the simpler to the more complex. The alternative explanation of this physical similarity is that we have here an instance of "conversion," that is to say, the Big Bend and the Oso people were remotely related and that it is just by chance that they look alike. Such a situation is biologically possible but not probable. The fact that the sites under consideration appear to be approximately contemporary lends weight to the first explanation of their relationship.

*Big Bend—Caplen Mound.* The cave dwellers of the Big Bend region and the people of the Caplen Mound site were in all probability quite different physically. The Big Bend series is differentiated by having a longer, narrower skull and a shorter face as the nine measurements and derived indices show on Table 3. The differences are all considerably greater than can be explained by random sampling. The interpretation of this is not difficult since a wide geographical and chronological distance separating the two radically different environments would tend to make a physical difference more than likely. The conclusion that in all probability they were remotely related seems the most tenable under the circumstances.

## Summary

In brief, the results of this study indicate that the Oso (Karankawa) and the Big Bend populations were closely related and that perhaps the Rio Grande valley served as the connecting link between them; also that the separation took place about the time our specimens were living. Further, it appears probable that neither was more than remotely related to the Caplen Mound (Attacapa) people who lived in historic times on the northern or upper portions of the Texas coast.

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## NOTES ON THE TABLES

The "Alpha" ("A") formula used in these comparisons is

$$\text{"A"} = n \times n'/n + n' \times D^2/SD_s^2$$

$n$ and $n'$ are the number of individuals in each series respectively. $D^2$ is the square of the difference between the two contrasted means. $SD_s^2$ is the square of the "standardized standard deviation" (i.e. the standard deviation of the longest series of North American Indians on which the particular measurement in question has been recorded). It is necessary to resort to this when the series are too small to have accurate standard deviations of their own. (*Cf.* Pearson, 1928; Pearl and Miner, 1935.)

TABLE 1

OSO—CAPLEN MOUND COMPARISON (Male)

| Measurements | n | n′ | $\frac{n \times n'}{n + n'}$ | M | — | M′ | = | D | $D^2$ | $SD^2_s$ | $D^2/SD^2_s$ | "A" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Glabello-occipital length | 11 | 9 | 4.9 | 191.6 | | 180.7 | | 10.9 | 118.8 | 27.2 | 27.2 | 21.0* |
| Maximum width | 7 | 8 | 3.7 | 132.2 | | 139.8 | | 7.6 | 57.7 | 24.5 | 3.3 | 12.2* |
| Thickness (1. parietal) | 10 | 7 | 4.1 | 6.0 | | 6.5 | | .5 | .2 | .9 | .2 | .8 |
| Minimum frontal width | 8 | 8 | 4.0 | 91.3 | | 92.1 | | .8 | .6 | 23.3 | .0 | .0 |
| Auricular height | 1 | 5 | .8 | 117.0 | | 117.8 | | .8 | .6 | 11.5 | .0 | .0 |
| Nasion-menton height | 1 | 2 | .6 | 125.0 | | 126.0 | | 1.0 | 1.0 | 30.7 | .0 | .0 |
| Nasion-prosthion height | 1 | 6 | .8 | 76.0 | | 75.5 | | .5 | .2 | 15.6 | .0 | .0 |
| Nasal height | 1 | 6 | .8 | 54.0 | | 52.3 | | 1.7 | 2.9 | 7.5 | .3 | .2 |
| Nasal width | 4 | 6 | 2.4 | 26.2 | | 25.1 | | 1.1 | 1.2 | 2.4 | .5 | 1.2 |
| Left orbital height | 1 | 6 | .8 | 34.0 | | 33.8 | | .2 | .0 | 2.5 | .0 | .0 |
| Left orbital width | 1 | 6 | .8 | 40.0 | | 39.5 | | .5 | .2 | 3.6 | .0 | .0 |
| Right orbital height | 1 | 6 | .8 | 34.0 | | 34.5 | | .5 | .2 | 2.6 | .0 | .0 |
| Right orbital width | 1 | 6 | .8 | 40.0 | | 40.8 | | .8 | .6 | 3.3 | .2 | .2 |
| Biorbital width | 1 | 6 | .8 | 97.0 | | 98.5 | | 1.5 | 2.2 | 8.2 | .2 | .2 |
| External palatal length | 3 | 6 | 2.0 | 55.0 | | 57.6 | | 2.6 | 6.7 | 7.9 | .8 | 1.6 |
| External palatal width | 3 | 6 | 2.0 | 68.0 | | 67.0 | | 1.0 | 1.0 | 10.8 | .0 | .0 |
| Condylo-symphysial length | 4 | 2 | 1.3 | 109.0 | | 121.5 | | 12.5 | 156.2 | 25.1 | 6.2 | 8.0* |
| Bicondylar width | 2 | 2 | 1.0 | 116.0 | | 127.5 | | 11.5 | 132.2 | 37.7 | 3.5 | 3.5 |
| Symphysial height | 7 | 2 | 1.5 | 36.0 | | 41.5 | | 5.5 | 30.2 | 6.2 | 4.8 | 7.2* |
| Thickness (corpus) | 1 | 2 | .6 | 19.0 | | 18.5 | | .5 | .2 | 1.3 | .1 | .1 |
| Ascending ramus, width | 5 | 2 | 1.4 | 35.4 | | 39.5 | | 4.1 | 16.8 | 8.4 | 2.0 | 2.8 |
| Mandibular angle | 2 | 2 | 1.0 | 118.0 | | 129.5 | | 11.5 | 132.2 | 26.2 | 5.0 | 5.0* |
| Indices: | | | | | | | | | | | | |
| Cranial index | 7 | 8 | 3.7 | 70.1 | | 77.3 | | 7.2 | 51.8 | 8.6 | 6.0 | 22.2* |
| Fronto-parietal index | 5 | 7 | 2.9 | 68.5 | | 65.2 | | 3.3 | 10.9 | 7.9 | 1.3 | 3.7 |
| Auricular height x length | 1 | 5 | .8 | 59.0 | | 65.2 | | 6.2 | 38.4 | 1.3 | 29.5 | 23.6* |
| Nasal index | 1 | 5 | .8 | 50.0 | | 48.0 | | 2.0 | 4.0 | 18.2 | .2 | .2 |
| Left orbital index | 1 | 6 | .8 | 85.0 | | 84.0 | | 1.0 | 1.0 | 24.7 | .0 | .0 |
| External palatal index | 3 | 6 | 2.6 | 122.0 | | 115.8 | | 6.2 | 38.4 | 41.2 | .9 | 2.3 |
| Mandibular index | 2 | 2 | 1.0 | 95.6 | | 94.5 | | 1.1 | 1.2 | 58.8 | .0 | .0 |
| Horizontal circumference | 2 | 8 | 1.6 | 530.0 | | 503.1 | | 26.9 | 723.6 | 126.3 | 5.7 | 31.9* |
| Transverse arc | 2 | 7 | 1.5 | 307.5 | | 310.5 | | 3.0 | 9.0 | 55.7 | .1 | .1 |

"n, M" refer to Oso series.
"n′, M′" refer to Caplen Mound series.

*Measurements showing significant differences.

TABLE 2

OSO—BIG BEND COMPARISON (Male)

| Measurements | n | n′ | $\frac{n \times n'}{n + n'}$ | M | — | M′ | = | D | $D^2$ | $SD^2_s$ | $D^2/SD^2_s$ | "A" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Glabello-occipital length | 11 | 11 | 5.5 | 191.6 | | 187.6 | | 3.9 | 15.2 | 27.2 | .5 | 2.7 |
| Maximum width | 7 | 11 | 4.2 | 132.2 | | 128.7 | | 3.5 | 12.2 | 24.5 | .4 | 1.7 |
| Nasion-prosthion height | 1 | 8 | .8 | 76.0 | | 69.5 | | 6.5 | 42.2 | 15.6 | 2.7 | 2.2 |
| Nasal height | 1 | 11 | .9 | 54.0 | | 51.6 | | 2.4 | 5.7 | 7.5 | .7 | .6 |
| Nasal width | 4 | 11 | 2.9 | 26.2 | | 26.9 | | .7 | .5 | 2.4 | .2 | .6 |
| Left orbital height | 1 | 11 | .9 | 34.0 | | 32.6 | | 1.4 | 1.9 | 2.5 | .7 | .6 |
| Left orbital width | 1 | 11 | .9 | 40.0 | | 40.0 | | .0 | .0 | 3.6 | .0 | .0 |
| Indices: | | | | | | | | | | | | |
| Cranial index | 7 | 11 | 4.2 | 70.1 | | 68.6 | | 1.5 | 2.2 | 8.6 | .2 | .8 |
| Nasal index | 1 | 11 | .9 | 50.0 | | 51.9 | | 1.9 | 3.6 | 18.2 | .2 | .1 |
| Left orbital index | 1 | 11 | .9 | 85.0 | | 81.5 | | 3.5 | 12.2 | 4.7 | .4 | .4 |

"n, M" refer to Oso series.

"n′, M′" refer to Big Bend series.

*Measurements showing significant differences.

TABLE 3

BIG BEND—CAPLEN MOUND COMPARISON (Male)

| Measurements | n | n′ | $\frac{n \times n'}{n + n'}$ | M — M′ = D | | | $D^2$ | $SD^2_s$ | $D^2/SD^2_s$ | "A" |
|---|---|---|---|---|---|---|---|---|---|---|
| Glabello-occipital length | 11 | 9 | 4.9 | 187.6 | 180.7 | 6.9 | 47.6 | 27.2 | 1.7 | 8.3* |
| Maximum width | 11 | 8 | 4.6 | 128.7 | 139.8 | 11.1 | 123.2 | 24.5 | 5.0 | 23.0* |
| Basion-bregma height | 10 | 9 | 4.7 | 134.4 | 137.7 | 3.3 | 10.8 | 19.8 | .5 | 2.3 |
| Bizygomatic width | 11 | 5 | 3.4 | 136.0 | 140.0 | 4.0 | 16.0 | 26.5 | .6 | 2.0 |
| Nasion-prosthion height | 8 | 6 | 3.4 | 69.5 | 75.5 | 6.0 | 36.0 | 15.6 | 2.3 | 7.8* |
| Nasal height | 11 | 6 | 3.8 | 51.6 | 52.3 | .7 | .5 | 7.5 | .0 | .0 |
| Nasal width | 11 | 6 | 3.8 | 26.9 | 25.1 | 1.8 | 3.2 | 2.4 | 1.3 | 4.9 |
| Left orbital height | 11 | 6 | 3.8 | 32.6 | 33.8 | 1.2 | 1.4 | 2.5 | .5 | 1.9 |
| Left orbital width | 11 | 6 | 3.8 | 40.0 | 39.5 | .5 | .2 | 3.6 | .0 | .0 |
| Indices: | | | | | | | | | | |
| Cranial index | 11 | 8 | 4.6 | 68.6 | 77.3 | 8.7 | 75.7 | 8.6 | 8.8 | 40.5* |
| Height x length index | 10 | 9 | 4.7 | 71.6 | 76.2 | 4.6 | 21.1 | 6.3 | 3.3 | 15.5* |
| Height x width index | 10 | 8 | 4.4 | 104.1 | 96.1 | 8.0 | 64.0 | 12.4 | 5.1 | 22.4* |
| Cranial module | 9 | 8 | 4.2 | 150.4 | 152.5 | 2.1 | 4.4 | 14.6 | .3 | 1.2 |
| Upper facial index | 5 | 5 | 2.5 | 51.3 | 53.0 | 1.7 | 2.9 | 7.8 | .3 | .7 |
| Nasal index | 11 | 5 | 3.4 | 51.9 | 48.0 | 1.9 | 3.1 | 18.2 | .1 | .3 |
| Left orbital index | 11 | 6 | 3.8 | 81.5 | 84.0 | 2.5 | 6.2 | 24.7 | .2 | .7 |

"n, M" refers to Big Bend series.

"n′, M′" refer to Caplen Mound series.

*Measurements showing significant differences.

# AN INTERESTING VEGETAL ARTIFACT FROM THE PECOS REGION OF TEXAS

By

MELVIN R. GILMORE

Ethnobotany Laboratory
University of Michigan

## EDITOR'S NOTE

This interesting short paper explains itself. The only comment the editor would make is that the shield may have been worn rather from motives of modesty than as a protection against the aggressive behavior of men. That the prickly pear internodes described in this paper, of which The University of Texas Anthropology Museum posssesses several, were worn over the pubis of females the editor thinks is very probable; but the difference in the amount of the small sharp bristles on the convex side as compared with the concave is hardly enough to justify the assumption of the protection motive. However, this is a small matter as the two motives are so nearly related. Dr. Gilmore is to be congratulated for finding an interesting and probably a true interpretation to an object that might easily have gone unexplained for all time.

J. E. PEARCE.

August 9, 1937.

# AN INTERESTING VEGETAL ARTIFACT FROM THE PECOS REGION OF TEXAS

By

MELVIN R. GILMORE

At our request, Professor J. E. Pearce of The University of Texas, sent to the Ethnobotanical Laboratory an unusual archaeological specimen found in a rock shelter in Val Verde County, Texas. In the report on this site the statement is made that "A prickly pear *(Opuntia)* leaf with a sacahuisti thong tied into it, for carrying or hanging, came from a depth of 15 inches."[1]

The object is a brittle, somewhat broken, oval-shaped internode of the prickly pear, *Opuntia lindheimeri.* One face is slightly concave, the other slightly convex (see Plates I and II). Its fragmentary condition make an absolute measurement impossible. The size is approximately 10.5 by 7.5 inches. In its natural state the internode of Opuntia is armed with long, strong spines growing in groups, and at the base of each group are masses of small sharp bristles, which break off easily (see Plates III and IV). In the specimen being discussed, the spines have been removed from both sides, and the bristles from the concave side, leaving that side perfectly smooth.

The parenchyma is dehydrated, leaving nothing but the cuticle and the fibro-vascular tissue of the specimen. Two-thirds of the circumference has been reinforced by the addition of two strands of "slender bear grass," *Nolina texana,* which have been sewed into the edge of the specimen by means of a simple basting stitch in one case, and a binding stitch on the very edge itself in the other. The specimen is so fragmentary that the exact original location of each stitch is uncertain. However, a reconstruction has been attempted in Plates V and VI.

It is clear in Plates I and II that at the base of the internode is a large loop ("c" in the reconstruction), and near it what seems

[1]Pearce, J. E., and Jackson, A. T., A Prehistoric Rock Shelter in Val Verde County, Texas. The University of Texas Anthropological Papers, Vol. I, No. 3, 1933, p. 31.

to be the broken part of another loop, "b." On the other side of the base, a hole piercing the edge may have served as the point of attachment for a third loop, "C." Similar evidence leads to the conclusion that there probably were three more similar loops Shown as "B," "A" and "a," in the reconstruction (Plates V and VI).

This prickly pear internode was intended for some specific use, otherwise the owner would not have taken the trouble to reinforce the circumference with strands of "slender bear grass." As Dr. Pearce suggests, it was apparently intended for carrying or hanging. No reference to a similar specimen has been found in the literature. George C. Martin describes prickly pear internodes found in a cave in the Big Bend region of Texas, but none of the specimens he describes have the reinforcement of the circumference.[2] Nothing in the construction of this specimen indicates that it was a unit of a more complex artifact, yet the presence of the loops implies that it was attached to something.

In seeking an explanation for the use of this object, the writer recalled a verbal account heard some twelve or thirteen years before among the Teton-Dakota, of a chastity shield, made from the flat stem of the northern prickly pear, *Opuntia missouriensis.* The description was too vague and indefinite to afford a clear knowledge of its construction, and a reproduction of the object could not be obtained. Yet, in spite of the fact that it seems not to have been used within the last generation, the Dakota said it had formerly been in use from time immemorial.

Unfortunately this meagre description cannot be strengthened by reports of other observers, for no statements concerning similar objects can be found in ethnographical literature. However, there is considerable evidence that measures of protection were taken by young women of the Plains tribes. In my contacts with the Great Plains Indians, I have heard frequent mention of this custom. Grinnel gives a description of a Cheyenne practice.[3]

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[2]Martin, George C., Big Bend Basket Maker Papers, No. 2. The Witte Memorial Museum, 1933, pp. 64 and 78.

[3]Grinnell, George Bird, The Cheyenne Indians. Yale University Press, 1923, Vol. I, p. 131.

> The Cheyenne young women and young girls always wore the protective rope, and most of them still do so. This is a small rope or line which passes about the waist, is knotted in front, passes down and backward between the thighs, and each branch is wound around the thigh down nearly to the knee. The wearing of this rope is somewhat confining, yet those who wear it can walk freely. It is worn always at night and during the day when women go abroad.
>
> It is complete protection to the woman wearing it and is assumed by girls as soon as the period of puberty is reached. All men, young and old, respect this rope, and anyone violating it would certainly be killed by the male relations of the girl.

Denig, speaking of the Assiniboin, has written:

> Young unmarried and as yet untouched women take the precaution at night to wind around their dress a strong cord, strapping the same tightly to their body and legs.
>
> This is done by some of their female relatives, the cord being well tied and wrapped around many times to prevent the consequences of any mistakes on the part of the young men as to the location of their bed, which might happen if they entered during the night, or if they were guests. It is considered a great credit to a young woman never to have slept unbound as above previous to marriage.[4]

The presence of several loops on the specimen under discussion suggests that if this was a chastity shield, the loops would have served as a means of attachment to the girdle and thighs of the individual wearing it. Such a use would also explain the complete removal of the spines from both sides, and the bristles from the concave side.

This interpretation of the use of this unique archaeological specimen can, of course, be considered only as a suggestion, although I feel it is the most likely identification. It is hoped that further archaeological and ethnographical evidence may sometime be found which will support the suggestion presented here.

Museum of Anthropology,
University of Michigan.

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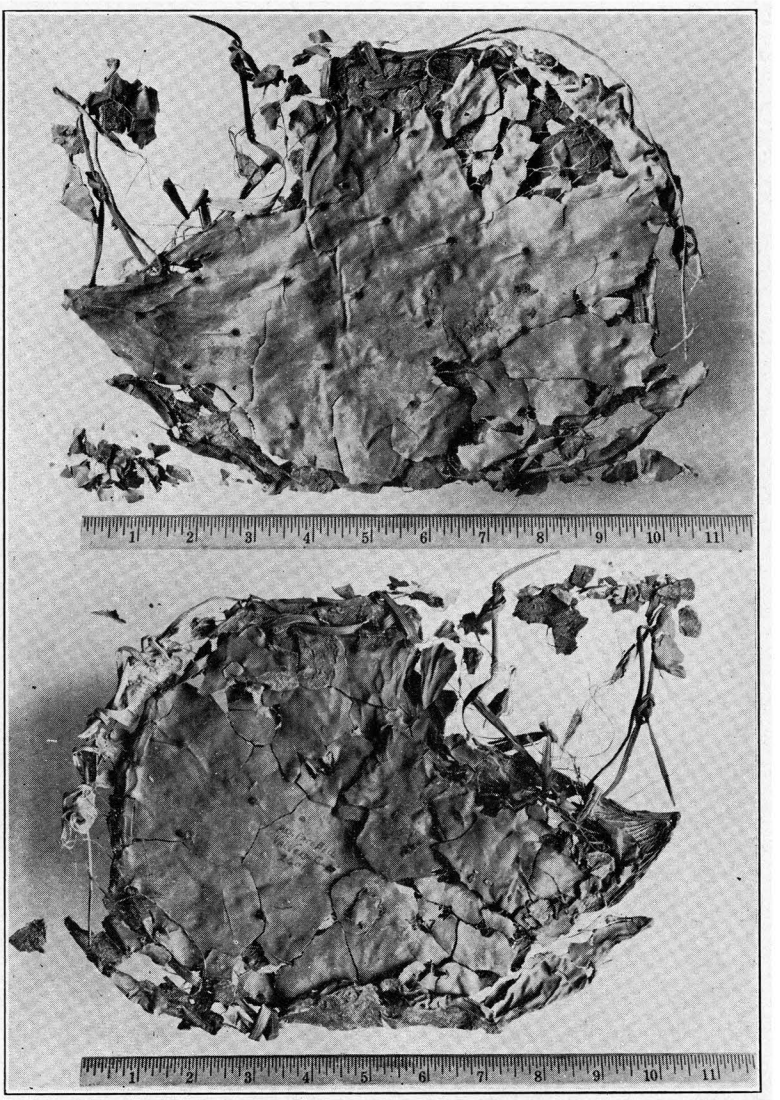
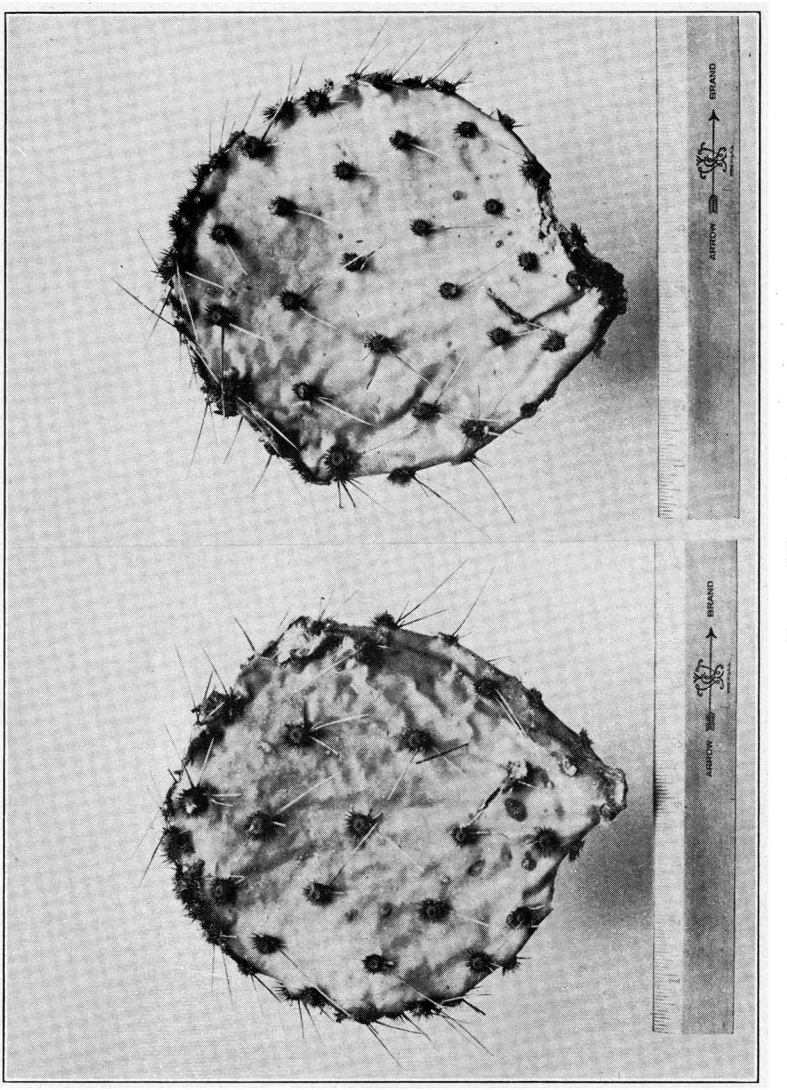
[4]Denig, Edwin Thompson, Indian Tribes of the Upper Missouri. Forty-sixth Annual Report, Bureau of American Ethnology, 1930, p. 590.



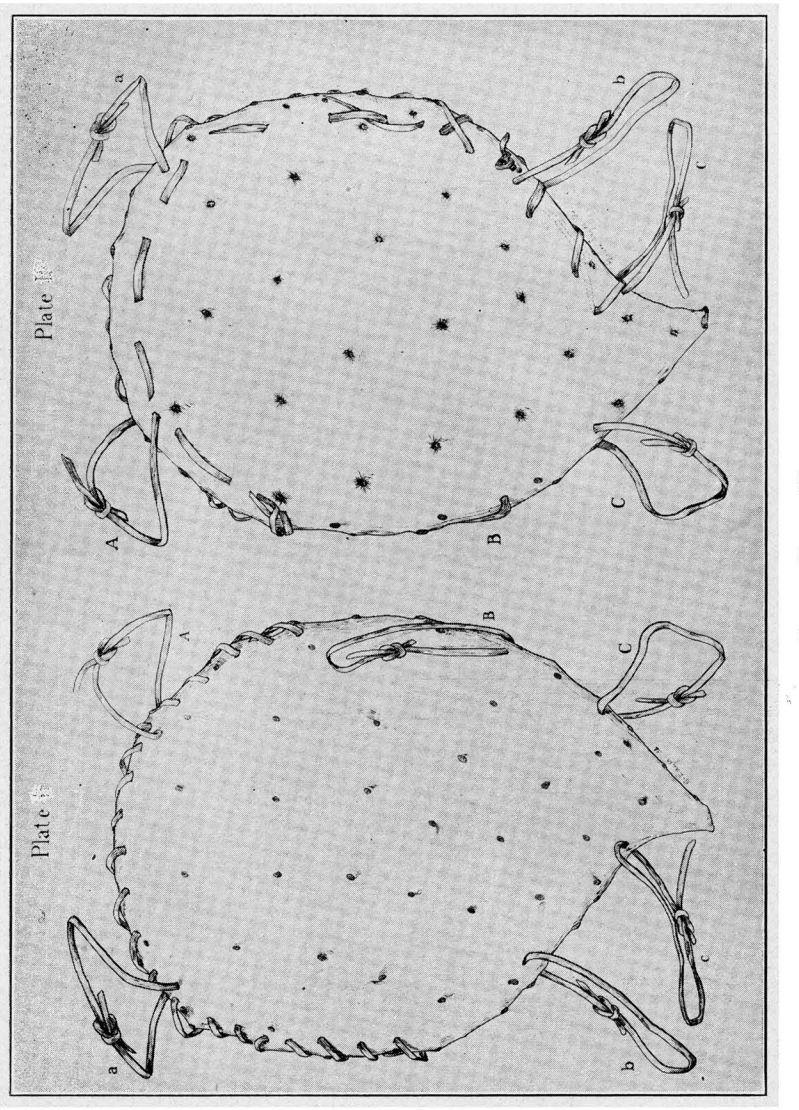
PLATES I AND II

The two sides of a prickly pear internode sewed with fibrous strands.




PLATES III AND IV

The two sides of an unaltered prickly pear internode.




PLATES V AND VI

Reconstruction of the two sides of the specimen shown in Plates I and II.

# SUPPLEMENTARY NOTES ON THE CORNER-TANG ARTIFACT

By

J. T. PATTERSON

Professor of Zoology
University of Texas

## EDITOR'S NOTE

As was to be expected, Dr. Patterson's bulletin on the corner-tang artifact not only attracted wide and favorable attention from anthropologists, museum authorities and amateur archaeologists throughout the country, but brought him notices of specimens in other states to such effect that he feels it is due those interested to have the information put in print and distributed. The picture he now gives us of their distribution must be fairly representative.

J. E. PEARCE.

September 1, 1937.

# SUPPLEMENTARY NOTES ON THE CORNER-TANG ARTIFACT

By

J. T. PATTERSON

## Introduction

In May of last year (1936) the writer published a paper on the corner-tang flint artifacts of Texas. Except for a few brief remarks concerning their possible occurrence in other states, this article was restricted to an account of Texas specimens. In a postscript attention was called to a recent report of the discovery of a few corner-tang pieces in Missouri, and in the last sentence the writer expressed a desire to learn of any other specimens which might have been found in regions not covered by the article. The response to this request has been highly gratifying, and has made it possible to accumulate a considerable amount of information which has a bearing on the distribution of these artifacts. It is the purpose of this supplementary note to present these new facts and to make such comments as may seem pertinent.

Reports were received from persons residing in various parts of the country. In case the correspondent did not send illustrations of the specimens, which he thought might represent corner-tang knives, the request was made for tracings or photographs of all such pieces. On the basis of the evidence thus submitted, one may conclude that, with but two exceptions, the corner-tang pieces occur in the group of states located between the Mississippi River and the Rocky Mountains, and extending from Texas to Montana. The two exceptions are the states of Illinois and Mississippi. There were many sketches and photographs of pieces submitted which, in the judgment of the writer, did not represent corner-tang knives in any of their varieties. Many of these tracings represented asymmetrical flint pieces that are found in practically every state. One of the common forms reported was referred to in the previous article as a possible forerunner of the corner-tang knife. The tang on such pieces is slightly off center at the base.

After analyzing all of the evidence that had been submitted, it was concluded that the true corner-tang had been reported from

fourteen states, as follows: Arkansas, Colorado, Illinois, Iowa, Kansas, Mississippi(?), Missouri, Montana, Oklahoma, Nebraska, New Mexico, South Dakota, Texas, and Wyoming. In the following section the main sources of the data upon which this conclusion was based will be given. At this point the writer wishes to acknowledge his deep indebtedness to all persons who have sent in information.

## Sources of Records

*Arkansas.* Only two records from Arkansas have been submitted. One of these was reported by Mr. Harry J. Lemley, Hope, Ark., and the other by Mr. Kyle L. Sly of St. Louis, Mo. Mr. Lemley states that his record is represented by a specimen found about ten years ago in Polk County, and Mr. Sly found his piece in Marion County.

*Colorado.* The first corner-tang knife to be reported from Colorado is the one described by Moorehead in his "Stone Age in North America" (Vol. 1, p. 159). This piece was from the collection of Mr. L. A. Norland of La Jara, Colo. Dr. E. B. Renaud in his "Archaeological Survey of Eastern Wyoming" (pp. 51–54) refers to several such pieces from Colorado, and illustrates by outline tracings four pieces, one of which was from Wyoming. He does not give the county sources of most of these specimens.

The twelve corner-tang pieces from Colorado, of which the county sources have been ascertained, have been reported by the following: Mr. F. E. Felkner, Sterling, Colo., two from Logan County; Judge C. C. Coffin, Ft. Collins, Colo., one from Larimer County; Mr. W. E. Baker, Boise City, Okla., one from Baca County; Mr. Joe Cramer, Wichita, Kan., one each from Prowers and Hiowa counties; Mr. C. G. Sellwood, Greeley, Colo., one from Weld County; Miss Marie Wormington, Curator of Archaeology at the Colorado Museum of Natural History, Denver, five specimens in the museum, all from Yuma County and belonging to the Andersen collection.

*Illinois.* Mr. B. W. Stephens of Quincy kindly offered to investigate the rumored occurrence of corner-tang pieces in Illinois. He reported a single specimen in his own collection from Calhoun County. None of the other pieces reported belongs to the corner-tang series.

*Iowa.* Mr. Paul Rowe, Gleenwood, Ia., submitted drawings of four specimens which had been found near the Missouri River in Mills County.

*Kansas.* The first evidence that corner-tang knives had been found in this State was supplied by Mr. W. E. Baker, who submitted tracings of two pieces belonging to Mr. G. C. Estep, Garden City, Kan. Later, Mr. Estep sent drawings of four additional knives. All six of these specimens had been found in Morton County, which occupies the extreme southwest corner of Kansas. Mr. Joe Cramer, Wichita, Kan., reported two from Harvey and two from Sumner County. Mr. W. C. Washburn, Elkhart, Kan., submitted tracings of five specimens, three from Morton County, and two from Seward County.

*Mississippi.* A single specimen has been reported from the State of Mississippi. This piece was illustrated by Professor Calvin S. Brown (1926, fig. 58, p. 144) in his book on the "Archaeology of Mississippi." It is a chert knife, slightly over four inches long, and was found in Pontotoc County. He refers to this piece as a peculiar knife with both edges sharp, and further states that "the arrangement of the notch and projections at the base is unusual." If one may judge from the photographic illustration, it is somewhat doubtful whether this piece should be included among the corner-tang knives. It is true that the stem is in the same position as is the one on the base corner-tang piece, but the notching is different, and the stem does not show the expanded end.

*Missouri.* The State of Missouri has yielded nine records. Five of these were reported by Mr. R. J. Duerr, Clinton, Mo. Four pieces are from Cedar County and one from St. Clair County. Mr. Will L. Hall of St. Louis sent in three records, one each from the counties of Jefferson, Osage, and Washington. Mr. Ray Julian, Joplin, Mo., has a broken piece from Jasper County. Several other drawings of flint knives from Missouri were received. Among these should be mentioned three submitted by Mr. E. L. Renno, St. Charles, Mo. These belong to Mr. Sly of St. Louis and constitute a type which was referred to in the previous paper as a possible prototype of the corner-tang knife.

*Montana.* A single record from Montana was found in an article by the late Dr. Walter Hough (1927). He illustrated a specimen which had been sent to him by Mr. C. A. Kinsey, Terry, Prairie

County, Montana. Dr. Hough further stated that several other specimens had been found in this same locality. A second record from the State was recently received from Mr. Oscar T. Lewis, Glendire, Mont. He reported that it had been found in Dawson County.

*Nebraska.* A total of eighteen corner-tang pieces has been reported to the writer from the State of Nebraska. Mr. Kieth Neville, North Platte, Neb., sent photographs of seven specimens from the various collectors of that city. Five of these were found in Lincoln County and two in McPherson County. Mr. T. L. Green, Scottsbluff, Neb., sent in five records, from the following counties: Banner one, Sioux two, and Morrill two. Mr. A. T. Hill, Director of the Museum of the Nebraska State Historical Society, has three specimens, one each from the counties of Chase, Custer, and Nance. Mr. George Metcalf, Wauneta, Neb., has one piece from Hayes County. Most of these specimens were found in the western part of the State, but two have been reported from the eastern border. These belong to Mr. A. L. Bishop, Omaha, and were first reported by Dr. R. F. Gilder of that city. One was found in Otoe County and the other in Sarpy County.

*New Mexico.* Eleven records have been obtained for New Mexico. Dr. H. P. Mera, Santa Fe, N. M., reported four, two from Eddy and one from Lea County in the southeastern corner of the State, and one from Santa Fe County. Mr. R. A. Prentice, Tucumcari, N. M., also reported four specimens, of which three were from Quay County and one from Curry County, both on the eastern border. Mr. W. E. Baker sent in two drawings of pieces which had been found near Eagle Nest Lake. This would place their source in Colfax County on the northern border. In the paper referred to above, Dr. Walter Hough illustrated a corner-tang piece from Taos County, N. M. He also stated that several other specimens had been found near Las Cruces.

*Oklahoma.* There are seven records from Oklahoma. These are from the following sources: Two from Cimarron County at the west end of the Oklahoma Panhandle, reported by Mr. W. E. Baker; one each from Cherokee and Muskogee Counties in the eastern part of the State, reported by Mr. L. B. Smith, Baggs,

Okla.; two from Texas County in the Panhandle, reported by Mr. Porter Montgomery, Jr., Dalhart, Texas; and finally one in the author's collection from Wichita County.

*South Dakota.* The only records of corner-tang knives from this State are to be found in a statement by Dr. E. B. Renaud, in the article referred to above. He says, "Outside of Colorado I recall seeing a knife of the kind under discussion in a small museum at Scenic in the Bad Lands of South Dakota and I was told of another belonging to a person living on the Indian Reservation, south of the town." In response to a letter of inquiry about these two pieces, Dr. Renaud wrote as follows: "Of the two South Dakota knives, the one at the little museum at Scenic, I actually saw, but not the other one. Both were said to come from that part of South Dakota." This would place their source in or about Pennington County, near the southwest corner of the State. The region from which they probably came is indicated on the map by the letter "X."

*Wyoming.* Next to Texas, Wyoming has so far given more records than any other of the fourteen states, a total of thirty-three. The first record was found in Dr. Renaud's paper, from Guernsey, Platte County. Mr. Jim Browne, Billings, Mont., submitted sketches of nine pieces, eight from Natrona County and one from Carbon County. Mr. T. L. Green listed three from Albany County, one from Goshen County, and one from Crook County. Mr. J. G. Atwood, Rawlins, Wyo., was very active in looking up records for the writer and reported a total of eleven, from the following counties, Sweetwater four, Carbon three, Natrona two, and Fremont two. Mr. R. E. Frison, Tensleep, Wyo., has three specimens from Washakie County. Mr. A. T. McDannald, Houston, Texas, reported a total of four, three from Park County and one from Natrona County.

*Texas.* Up to the time of writing this article, a total of eighty-two new records have been obtained for Texas. The total number of records for the State is now 608. These specimens have been reported from eighty-three counties, which makes an increase of thirteen above what were reported in the last paper. The new counties with the number of records for each are, Bandera (3), Dallam (1), Gonzales (2), Karnes (2), Lamar (1), Medina (2), Oldham (1), Panola (1), Parker (1), Randall (1), San Jacinto (1), Sherman (1), and Young (2). Six of the new counties fall within

the central Texas area, and seven lie outside of this area. Three of the latter (Lamar, Panola, San Jacinto) are located in East Texas, and the other four (Dallam, Oldham, Randall, Sherman) are all situated in the northwest corner of the Panhandle. The thirteen new counties yielded but nineteen records, while the remaining sixty-three records were reported from counties previously listed.

## The Distribution Map

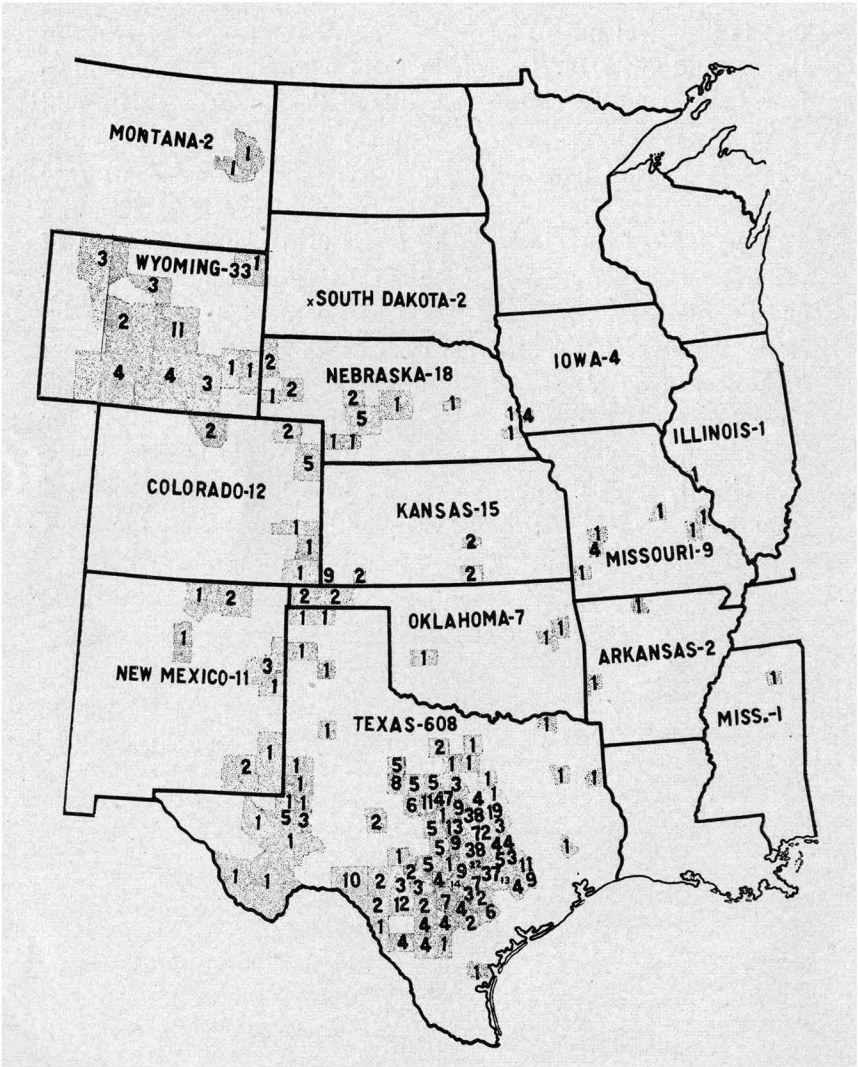
The 725 records for the fourteen states are displayed in the accompanying text-figure. The records were plotted on a base map on which the county names and outlines were printed in blue, and since this color photographs white, these do not show in the reproduction. Each county was therefore stippled and a figure, representing the number of records from the county, was placed at or near its center. The map is intended to give the reader a "bird's eye view" of the distribution of the corner-tang pieces within the area shown.

The greatest concentration of these artifacts lies in central Texas, where the group of sixty-three counties gave a total of 582 records. This is over ninety-five per cent of all records for the State, and about eighty per cent of all records for the fourteen states. This means, in all probability, that Central Texas represents their place of origin, and constitutes the main center from which they became dispersed over central United States.

The records on the eastern half of the distributional map are thinly scattered, but on the western half they are much more numerous. From the southeastern corner of New Mexico northward to Western Nebraska there is a trail of records, which doubtless would have been continuous had it been possible to have secured the county sources of all specimens reported to the writer. This would indicate their dispersal from Texas must, in the main, have taken place along the eastern foothills of the Rocky Mountains. From Western Nebraska the main area turns westward into Wyoming, where the corner-tang pieces occur in considerable numbers.

The best explanation that can be offered for the distributional picture of these artifacts northward is to be found in the movement

of the tribes within this great plains area. Wissler (1922) states that in historical times these tribes ranged from north to south in the heart of this area. One of the main migration paths is said to have been along the eastern foot-hills of the Rockies. This would mean that specimens secured in Texas had been carried north, where they could have been duplicated. There is some evidence that the Indians did duplicate these pieces. In several localities a single type of corner-tang piece seems to predominate. Thus of the five specimens reported from the adjacent counties of Cedar and St. Clair, Mo., four are of the back-corner-tang type. Again, of the seven specimens reported from North Platte, Neb., four are back-corner tang pieces and two belong to the mid-back type, and these two types are closely similar. All six types described for Texas are well represented over the entire distributional area. There is a slightly higher proportion of the back-corner types reported from the region lying north of Texas, but the numbers are too small to be statistically significant.




Map showing the distribution of 725 corner-tang pieces in central United States. The figure after the name of the state represents the number of records from the state.

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